Epidemiology is one of the basic sciences of the community medicine. Without understanding the principles of epidemiology, it is difficult to understand the community medicine.

Epidemiology means:

Epi = among
Demos = people
Ology = study

The study of people

Definition of Epidemiology

Epidemiology is the study of distribution and determinants of disease frequency and health-related events in human population and application of this study to control of health problems.

From the above definition four points are evident:

1. Epidemiology is the study of frequency of disease and health-related events in the community
2. It is the study of distribution of disease and health-related events
3. It is the study of determinants of disease and health-related events
4. It is the application of knowledge gained from the above three points to control the disease and health problems of the community.

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Scope of Epidemiology

- 1. Causation of the disease.
- 2. Natural history of the disease.
- 3. Health status of the population.
- 4. Evaluation of Interventions.

1. Causation of the disease.

- Most of diseases are caused by interaction between *genetic and environmental factors*. (Diabetes)
- *Personal behaviors* affect this interplay.
- Epidemiology is used to study their **influence and the effects** of *preventive interventions* through health promotion.

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2. Natural history of the disease

Epidemiology is also concerned with the course and outcome (natural history) of diseases in individuals and groups.

Natural History of Disease

Hence it refers to the progression of a disease process in an individual over time, in the absence of treatment.

For example, untreated infection with HIV causes a spectrum of clinical problems beginning at the time of seroconversion (primary HIV) and terminating with AIDS and usually death.

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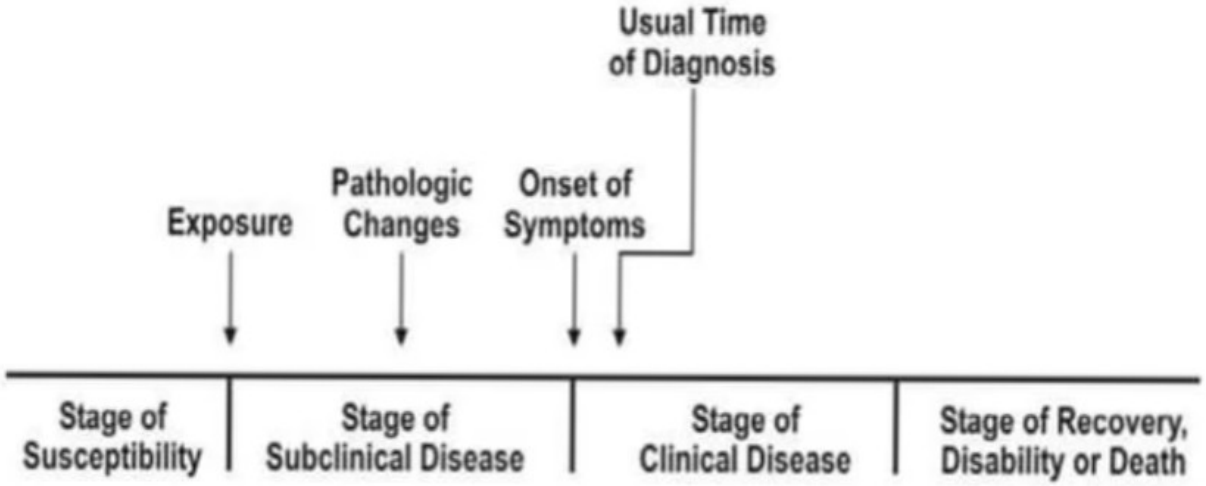
2. Natural history of the disease



3. Health status of the population

- Epidemiology is often used to describe the *health status of population*.
- Knowledge of the **disease burden in populations** is essential for *health authorities*.
- To use *limited resources* to the best possible effect by **identifying priority health programmes** for prevention and care.

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4. Evaluation of Interventions

- To evaluate the **effectiveness and efficiency** of health services.

- This means determining things such as –
- Impact of Contraceptive use on Population Control.
- the efficiency of sanitation measures to control diarrheal diseases and

USES OF EPIDEMIOLOGY :

The uses of epidemiology are:

- To study the health history of population and their disease trends.
- To arrive at community Diagnosis.
- To plan and evaluate health services.
- To estimate individuals risk and chance.
- To define and redefine syndromes.
- To complete the natural history of disease.
- To search for causes of health and disease by employing epidemiological methods.

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